

SEQUENCE LISTING

- (1) GENERAL INFORMATION:
 - (i) APPLICANT:
 - (A) NAME: Rowett Research Services Limited
 - (B) STREET: Greenburn
 - (C) CITY: Buckburn ABERDEEN
 - (E) COUNTRY: United Kingdom
 - (F) POSTAL CODE (ZIP): AB21 9SB
 - (ii) TITLE OF INVENTION: Chimeric binding peptide library screening method
 - (iii) NUMBER OF SEQUENCES: 76
 - (iv) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: Patentin Release #1.0, Version #1.30 (EPO)
- (2) INFORMATION FOR SEQ ID NO: 1:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 38 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

TCAGGTCAGA GTGACCTGAG CTAAAATAAC ACATTCAG

- (2) INFORMATION FOR SEQ ID NO: 2:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 38 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO



	(xi) SE	QUEN	ICE D	ESCR	IPTI	ON:	SEQ	ID N	0: 2	:					
AGT	CCAG	TCT	CACT	GGAC	TC G	ATTT	TATT	G TG	TAAG	TC						38
(2)	INF	ORMA	TION	FOR	SEQ	ID	NO:	3:								
	(i	(A) L B) T C) S	ENGT YPE: TRAN	HARA H: 5 nuc DEDN	21 b leic ESS:	ase aci dou	pair d	s							
	(ii) MO	LECU	LE T	YPE:	CDN	A									
	(iii) HY	POTH	ETIC	AL:	ИО										
	(iv) AN	TI-S	ENSE	: NO											
	(ix	(AME/	KEY: ION:											
	(xi) SE	QUEN	CE D	ESCR	IPTI	ON:	SEQ	ID N	0: 3	:					
AAG	CTTG	CAT	GCAA	ATTC	TA T	TTCA	AGGA	G AC	AGTC	ATAA				CTA Leu		55
CCT Pro	ACG Thr	GCA Ala	GCC Ala	GCT Ala 10	GGA Gly	TTG Leu	TTA Leu	TTA Leu	CTC Leu 15	GCG Ala	GCC Ala	CAG Gln	CCG Pro	GCC Ala 20	ATG Met	103
GCC Ala	CAA Gln	GTG Val	CAG Gln 25	CTG Leu	CAG Gln	TAA *	TAG *	GCG Ala 30	GCC Ala	GCA Ala	GGG Gly	GGA Gly	GGA Gly 35	GGG Gly	TCC Ser	151
					GAG Glu											199
GCT Ala	TCA Ser 55	GGC Gly	TAC Tyr	CAT His	TAT Tyr	GGA Gly 60	GTC Val	TGG Trp	TCC Ser	TGT Cys	GAG Glu 65	GGC Gly	TGC Cys	AAG Lys	GCC Ala	247
TTC Phe 70	TTC Phe	AAG Lys	AGA Arg	AGT Ser	ATT Ile 75	CAA Gln	GGA Gly	CAT His	AAC Asn	GAC Asp 80	TAT Tyr	ATG Met	TGT Cys	CCA Pro	GCC Ala 85	295
ACC Thr	AAC Asn	CAG Gln	TGC Cys	ACC Thr 90	ATT Ile	GAT Asp	AAA Lys	AAC Asn	AGG Arg 95	AGG Arg	AAG Lys	AGC Ser	TGC Cys	CAG Gln 100	GCC Ala	343
TGC Cys	CGG Arg	CTC Leu	CGT Arg 105	AAA Lys	TGC Cys	TAC Tyr	GAA Glu	GTG Val 110	GGA Gly	ATG Met	ATG Met	AAA Lys	GGT Gly 115	GGG Gly	ATA Ile	391
CGA Arg	AAA Lys	GAC Asp	CGA Arg	AGA Arg	GGA Gly	GGG Gly	AGA Arg	ATG Met	TTG Leu	AAA Lys	CAC His	AAG Lys	CGC Arg	CAG Gln	AGA Arg	439

120 125 1

GAT GAT GGG GAG GGC AGG GGT GAA GTG GGG TCT TGA TAATCAGGTC Asp Asp Gly Glu Gly Arg Gly Glu Val Gly Ser *

140

AGAGTGACCT GAGCTAAAAT AACACATTCA GAATTC

521

485

- (2) INFORMATION FOR SEQ ID NO: 4:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 145 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala

Ala Gln Pro Ala Met Ala Gln Val Gln Leu Gln * Ala Ala Ala Ala 20 25 30

Gly Gly Gly Ser Met Glu Ser Ala Lys Glu Thr Arg Tyr Cys Ala 35 40 45

Val Cys Asn Asp Tyr Ala Ser Gly Tyr His Tyr Gly Val Trp Ser Cys
50 55 60

Glu Gly Cys Lys Ala Phe Phe Lys Arg Ser Ile Gln Gly His Asn Asp
65 70 75 80

Tyr Met Cys Pro Ala Thr Asn Gln Cys Thr Ile Asp Lys Asn Arg Arg 85 90 95

Lys Ser Cys Gln Ala Cys Arg Leu Arg Lys Cys Tyr Glu Val Gly Met 100 105 110

Met Lys Gly Gly Ile Arg Lys Asp Arg Arg Gly Gly Arg Met Leu Lys

His Lys Arg Gln Arg Asp Asp Gly Glu Gly Arg Gly Glu Val Gly Ser 130 135 140

- (2) INFORMATION FOR SEQ ID NO: 5:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 102 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO

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- (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 1... 102
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

AAA	CGA	ACT	GTG	GCT	ĢCA	CCA	TCT	GTC	TTC	ATC	TTC	CCG	CCA	TCT	GAT	48
Lys	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	
				150					155					160	•	

GAG CAG TTG AAA TCT GGA ACT GCC TCT GTT GTG TGC CTG CTG AAT AAC 96
Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
165 170 175

TTC TAT
Phe Tyr

- (2) INFORMATION FOR SEQ ID NO: 6:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 34 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
1 5 10 15

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn 20 25 30

Phe Tyr

- (2) INFORMATION FOR SEQ ID NO: 7:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 150 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO .
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 1..150
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

5

	Ala							GGC Gly								49
AAA Lys	CGA Arg	ACT Thr	GTG Val	GCT Ala 55	GCA Ala	CCA Pro	TCT Ser	GTC Val	TTC Phe 60	ATC Ile	TTC Phe	CCG Pro	CCA Pro	TCT Ser 65	GAT Asp	96
GAG Glu	CAG Gln	TTG Leu	AAA Lys 70	TCT Ser	GGA Gly	ACT Thr	GCC Ala	TCT Ser 75	GTT Val	GTG Val	TGC Cys	CTG Leu	CTG Leu 80	AAT Asn	AAC Asn	144
TTC Phe																150

- (2) INFORMATION FOR SEQ ID NO: 8:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 50 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

Met Ala Gln Pro Thr Thr Arg Pro Gly Gln Gly Thr Arg Leu Asp Ile

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn

Phe Tyr 50

- (2) INFORMATION FOR SEQ ID NO: 9:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 150 base pairs(B) TYPE: nucleic acid

 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS (B) LOCATION: 1...150
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

6 ATG GCC CAG TCC CAC CAC GCG TCC GGC GGA GGG ACC AAG GTG GAG ATC 48 Met Ala Gln Ser His His Ala Ser Gly Gly Gly Thr Lys Val Glu Ile 55 AAA CGA ACT GTG GCT GCA CCA TCT GTC TTC ATC TTC CCG CCA TCT GAT 96 Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp 70 GAG CAG TTG AAA TCT GGA ACT GCC TCT GTT GTG TGC CTG CTG AAT AAC 144 Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn 90 150 TTC TAT Phe Tyr 100

- (2) INFORMATION FOR SEQ ID NO: 10:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 50 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

Met Ala Gln Ser His His Ala Ser Gly Gly Gly Thr Lys Val Glu Ile 1 15

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp 20 25 30

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn 35 40 45

Phe Tyr

- (2) INFORMATION FOR SEQ ID NO: 11:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 566 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 41..475
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

AAGCTTGCAT GCAAATTCTA TTTCAAGGAG ACAGTCATAA ATG AAA TAC CTA TTG

							•	7			Met	Lys	Tyr	Leu	Leu 55		
CCT Pro	ACG Thr	GCA Ala	GCC Ala	GCT Ala 60	GGA Gly	TTG Leu	TTA Leu	TTA Leu	CTC Leu 65	GCG Ala	GCC Ala	CAG Gln	CCG Pro	GCC Ala 70	ATG Met		103
GCC Ala	GAG Glu	GTG Val	CAA Gln 75	CTG Leu	CAG Gln	TAA *	TAG *	GCG Ala 80	GCC Ala	GCA Ala	GLY GGG	GGA Gly	GGA Gly 85	GGG Gly	TCC Ser		151
														GAC Asp			199
GCT Ala	TCA Ser 105	GGC Gly	TAC Tyr	CAT His	TAT Tyr	GGA Gly 110	GTC Val	TGG Trp	TCC Ser	TGT Cys	GAG Glu 115	GGC Gly	TGC Cys	AAG Lys	GCC Ala		247
TTC Phe 120	TTC Phe	AAG Lys	AGA Arg	AGT Ser	ATT Ile 125	CAA Gln	GGA Gly	CAT His	AAC Asn	GAC Asp 130	TAT Tyr	ATG Met	TGT Cys	CCA Pro	GCC Ala 135		295
														CAG Gln 150			343
TGC Cys	CGG Arg	CTC Leu	CGT Arg 155	AAA Lys	TGC Cys	TAC Tyr	GAA Glu	GTG Val 160	GGA Gly	ATG Met	ATG Met	AAA Lys	GGT Gly 165	GGG Gly	ATA Ile		391
														CAG Gln			439
				GGC Gly								TAAI	CAGO	STC			485
AGAG	TGAC	CT G	AGCT	'AAAA	T AA	CACA	TTCA	GGŢ	CGAC	TTG	GGTC	AGTO	TG A	CCGG	GACA	Ą	545
AGTT	AATG	TA A	CCTC	GAAT	T C					• •							566

(2) INFORMATION FOR SEQ ID NO: 12:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 145 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

Met Lys Tyr Leu Leu Pro Thr Ala Ala Ala Gly Leu Leu Leu Leu Ala 1 5 10 15

Ala Gln Pro Ala Met Ala Glu Val Gln Leu Gln * * Ala Ala Ala 20 25 30

Gly Gly Gly Ser Met Glu Ser Ala Lys Glu Thr Arg Tyr Cys Ala 35 40 45

PCT/GB98/02630 WO 99/11785

Val Cys Asn Asp Tyr Ala Ser Gly Tyr His Tyr Gly Val Trp Ser Cys 50 Glu Gly Cys Lys Ala Phe Phe Lys Arg Ser Ile Gln Gly His Asn Asp Tyr Met Cys Pro Ala Thr Asn Gln Cys Thr Ile Asp Lys Asn Arg Arg Lys Ser Cys Gln Ala Cys Arg Leu Arg Lys Cys Tyr Glu Val Gly Met Met Lys Gly Gly Ile Arg Lys Asp Arg Arg Gly Gly Arg Met Leu Lys His Lys Arg Gln Arg Asp Asp Gly Glu Gly Arg Gly Glu Val Gly Ser 135

- (2) INFORMATION FOR SEQ ID NO: 13:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 539 base pairs
 - (B) TYPE: nucleic acid(C) STRANDEDNESS: double

 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS (B) LOCATION: 41..481
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

(XI) SEGOENCE SECONDE	
AAGCTTGCAT GCAAATTCTA TTTCAAGGAG ACAGTCATAA	A ATG AAA TAC CTA TTG 55 Met Lys Tyr Leu Leu 150
CCT ACG GCA GCC GCT GGA TTG TTA TTA CTC GCC	G GCC CAG CCG GCA ATG 103
Pro Thr Ala Ala Ala Gly Leu Leu Leu Ala	a Ala Gln Pro Ala Met
155	165
GCC GAG ATG GAA TCT GCC AAG GAG ACT CGC TAG	C TGT GCA GTG TGC AAT 151
Ala Glu Met Glu Ser Ala Lys Glu Thr Arg Tys	r Cys Ala Val Cys Asn
170	130
GAC TAT GCT TCA GGC TAC CAT TAT GGA GTC TGC Asp Tyr Ala Ser Gly Tyr His Tyr Gly Val Tr 185	TCC TGT GAG GGC TGC 199 p Ser Cys Glu Gly Cys 195
AAG GCC TTC TTC AAG AGA AGT ATT CAA GGA CAT	r AAC GAC TAT ATG TGT 247
Lys Ala Phe Phe Lys Arg Ser Ile Gln Gly His	s Asn Asp Tyr Met Cys

9

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	200)				205					210					
CCA Pro 215	Ala	ACC Thr	: AAC : Asn	CAG Gln	TGC Cys 220	ACC Thr	ATT Ile	GAT Asp	AAA Lys	AAC Asn 225	Arg	AGG Arg	AAG Lys	AGC Ser	TGC Cys 230	295
CAG Gln	GCC	TGC	CGG Arg	CTC Leu 235	CGT Arg	AAA Lys	TGC Cys	TAC Tyr	GAA Glu 240	GTG Val	GGA Gly	ATG Met	ATG Met	AAA Lys 245	GGT Gly	343
GGG	ATA Ile	. CGA Arg	AAA Lys 250	GAC Asp	CGA Arg	AGA Arg	GGA Gly	GGG Gly 255	AGA Arg	ATG Met	TTG Leu	AAA Lys	CAC His 260	AAG Lys	CGC Arg	391
CAG Gln	AGA Arg	GAT Asp 265	Asp	GGG Gly	GAG Glu	GGC Gly	AGG Arg 270	GGT Gly	GAA Glu	GTG Val	GGG Gly	TCT Ser 275	GGG Gly	GGA Gly	GGA Gly	439
GGG Gly	TCG Ser 280	Ala	CAG Gln	CCG Pro	GCC Ala	CTC Leu 285	CTG Leu	CAG Gln	CTG Leu	GCG Ala	GCC Ala 290	GCA Ala	TĄĄ			491
CTG	ATTG.	AGT	CGAC'	ITGG	GT C	AGTC:	TGAC(C GG	JACA!	aagt	TAA	rgta	ACC 1	rcga	ATTC	539
•																
(2)	INF	ORMA'	TION	FOR	SEQ	ID !	10:	14:								
		()	A) Li B) T	ence Engti YPE: OPOLO	H: 14	47 ar	mino sid						.*			
	(11 (xi)) MO	QUEN(LE TY	(PE: ESCRI	prot [PTIC	cein ON: S	SEQ 1	D NO): 1-	ı:					
Met 1	(xi) SE	QUENC	LE TY CE DE Leu 5	ESCR	[PTIC	N: 3					Leu	Leu	Leu 15	Ala	
1	(xi) SE	QUEN(Leu	Pro	Thr	N: S	Ala	Ala 10	Gly	Leu			15		
l Ala	(xi Lys Gln	Tyr Pro	QUENC Leu Ala 20	Leu 5	Pro Pro Ala	Thr Glu	N: S Ala Met	Ala Glu 25	Ala 10 Ser	Gly Ala	Leu Lys	Glu	Thr 30	15 Arg	Tyr	
1 Ala Cys	(xi Lys Gln Ala	Tyr Pro Val 35	Leu Ala 20 Cys	Leu 5 Met	Pro Ala Asp	Thr Glu Tyr	Ala Met Ala 40	Ala Glu 25 Ser	Ala 10 Ser Gly	Gly Ala Tyr	Leu Lys His	Glu Tyr 45	Thr 30 Gly	15 Arg Val	Tyr Trp	
1 Ala Cys Ser	(xi Lys Gln Ala Cys 50	Tyr Pro Val 35	Leu Ala 20 Cys	Leu 5 Met Asn	Pro Ala Asp	Thr Glu Tyr Ala	Ala Met Ala 40 Phe	Ala Glu 25 Ser Phe	Ala 10 Ser Gly Lys	Gly Ala Tyr Arg	Leu Lys His Ser 60	Glu Tyr 45 Ile	Thr 30 Gly	15 Arg Val Gly	Tyr Trp His	
Ala Cys Ser Asn 65	Lys Gln Ala Cys 50 Asp	Tyr Pro Val 35 Glu	Leu Ala 20 Cys Gly Met	Leu 5 Met Asn Cys	Pro Ala Asp Lys Pro 70	Thr Glu Tyr Ala 55	Ala Met Ala 40 Phe	Ala Glu 25 Ser Phe Asn	Ala 10 Ser Gly Lys	Gly Ala Tyr Arg Cys 75	Leu Lys His Ser 60	Glu Tyr 45 Ile	Thr 30 Gly Gln Asp	15 Arg Val Gly Lys	Tyr Trp His Asn 80	
Ala Cys Ser Asn 65	(xi Lys Gln Ala Cys 50 Asp	Tyr Pro Val 35 Glu Tyr	Leu Ala 20 Cys Gly Met	Leu 5 Met Asn Cys Cys	Pro Ala Asp Lys Pro 70	Thr Glu Tyr Ala 55 Ala Ala	Ala Met Ala 40 Phe Thr	Ala Glu 25 Ser Phe Asn	Ala 10 Ser Gly Lys Gln Leu 90	Gly Ala Tyr Arg Cys 75 Arg	Leu Lys His Ser 60 Thr	Glu Tyr 45 Ile Ile Cys	Thr 30 Gly Gln Asp	Arg Val Gly Lys Glu 95	Tyr Trp His Asn 80 Val	
Ala Cys Ser Asn 65 Arg	(xi Lys Gln Ala Cys 50 Asp Arg	Tyr Pro Val 35 Glu Tyr Lys Met	Leu Ala 20 Cys Gly Met Ser Lys 100	Leu 5 Met Asn Cys Cys Sys	Pro Ala Asp Lys Pro 70 Gln	Thr Glu Tyr Ala 55 Ala Ala	Ala Met Ala 40 Phe Thr Cys	Ala Glu 25 Ser Phe Asn Arg Lys 105	Ala 10 Ser Gly Lys Gln Leu 90 Asp	Gly Ala Tyr Arg Cys 75 Arg	Leu Lys His Ser 60 Thr Lys	Glu Tyr 45 Ile Ile Cys Gly	Thr 30 Gly Gln Asp Tyr Gly 110	Arg Val Gly Lys Glu 95 Arg	Tyr Trp His Asn 80 Val	

10

Ala Ala 145

(2) INFORMATION FOR SEQ ID NO: 15:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 372 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (ix) FEATURE:
 - (A) NAME/KEY: CDS (B) LOCATION: 1...372
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

			CTG Leu													49
TCC Ser	CTG Leu 165	AGA Arg	CTC Leu	TCC Ser	TGT Cys	GCA Ala 170	GCC Ala	TCG Ser	GGA Gly	TTC Phe	CCC Pro 175	TTT Phe	AGT Ser	ACT Thr	TAT Tyr	96
GGC Gly 180	ATG Met	CAC His	TGG Trp	CGC Arg	CAG Gln 185	GCT Ala	GTC Val	CCA Pro	GGC Gly	AAG Lys 190	GGG Gly	CTG Leu	GAG Glu	TGG Trp	GTG Val 195	144
			TCA Ser													192
AAG Lys	GGC Gly	CGA Arg	TTC Phe 215	ACC Thr	ATC Ile	TCC Ser	AGA Arg	GAC Asp 220	AAT Asn	TCC Ser	AAG Lys	AAC Asn	ACG Thr 225	TTG Leu	TAT Tyr	240
CTG Leu	CAA Gln	ATG Met 230	AAC Asn	AGC Ser	CTG Leu	AGA Arg	GCT Ala 235	GAG Glu	GAC Asp	ACG Thr	GCT Ala	GTG Val 240	TAT Tyr	TAC Tyr	TGT Cys	288
GCG Ala	AGA Arg 245	G AT Asp	TTA Leu	GAC Asp	CCC Pro	ACC Thr 250	Arg	TAT Tyr	AGC Ser	Ser	GGC Gly 255	TGG Trp	GAC Asp	ACT Th:	GAC Asp	336
			CAG Gln													372

- (2) INFORMATION FOR SEQ ID NO: 16:
 - (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 124 amino acids

11

- (B) TYPE: amino acid
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

Gln Val Gln Leu Gln Gln Ser Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Pro Phe Ser Thr Tyr 20 25 30

Gly Met His Trp Arg Gln Ala Val Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val 50 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys 85 90 95

Ala Arg Asp Leu Asp Pro Thr Arg Tyr Ser Ser Gly Trp Asp Thr Asp 100 105 110

Tyr Trp Gly Gln Gly His Leu Val Thr Val Ser Ser

- (2) INFORMATION FOR SEQ ID NO: 17:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 327 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: cDNA
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 1..327
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

CNI	70	_	מחמ	CTC	ACG	CAG	TCT	CCA	GGC	ACC	CTG	TCT	TTG	TCT	CCG	GGG	48
~ 1 .			m L	Ŧ	m L -	C1 -	50-	D = 0	C1 **	Th-	LAn	Sar	Lan	Sar	Pro	Glv	
GIL	ו דת	Ξ	THE	Leu	THE	GTH	Ser	ETO	GTA	1111	Tie a	JUL	neu	J = 1		O L y	
12:)					130					133					TAO	
	. Th															Gly 140	

GAA AGA GCC ACC CTC TCC TGC AGG GCC AGT CAG AAT ATT GGC AGC AGC 96
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Asn Ile Gly Ser Ser
145 150 155

TCC TTA GCC TGG TAC CAA CAG AAA CCT GGC CAG GCT CCC AGG CTC CTC

Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu

12

170 160 165 ATC TAT GGT GCA TCC ACC AGG GCC ACT GGT ATC CCA GCC AGG TTC AGT 192 Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser 180 185 175 240 GGC AGT GGG TCA GGG ACA CAA TTC ACT CTC ACC ATC AGC AGC CTG CAG Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Ser Leu Gln 190 200 TCT GAA GAT TTT GCA GTT TAT TAC TGT CAG CAG TAT AAT TTC TGG CCA 288 Ser Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Phe Trp Pro 210 215 205

TTC ACT TTT GGC CCT GGG ACC AAG CTG GAG ATC AAA CGT

Phe Thr Phe Gly Pro Gly Thr Lys Leu Glu Ile Lys Arg

230

- (2) INFORMATION FOR SEQ ID NO: 18:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 109 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

Glu Thr Thr Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Asn Ile Gly Ser Ser 20 25 30

Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu 35 40 45

Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser
50 60

Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Ser Leu Gln 65 70 75 80

Ser Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Phe Trp Pro 85 90 95

Phe Thr Phe Gly Pro Gly Thr Lys Leu Glu Ile Lys Arg

- (2) INFORMATION FOR SEQ ID NO: 19:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 72 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

 - (iii) HYPOTHETICAL: NO

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(iv	ANTI-SENSE:	NO
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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:	
TTTTCTGCAG TAATAGGCGG CCGCAGGGGG AGGAGGGTCC ATCGAAGGTC GCGAAGCAGA	60
GACTGTTGAA AG	72
(2) INFORMATION FOR SEQ ID NO: 20:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 75 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20: TTTTGAATTC TTATTAACCA CCGAACTGCG GGTGACGCCA AGCGCTTGCG GCCGTTAAGA	60
TTTTGAATTC TTATTAACCA CCGAACTGCG GGTGACGCCA AGCGCIIGCG GCCGIIAAGA	
CTCCTTATTA CGCAG	75
(2) INFORMATION FOR SEQ ID NO: 21:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 32 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:	
AAAAGCGGCC GCACTGGCCT GAGAGANNNN NN	32
(2) INFORMATION FOR SEQ ID NO: 22:	

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 16 base pairs

1	

- (B) TYPE: nucleic acid(C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "synthetic DNA"
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

TCGACCCACG CGTCCG

16

- (2) INFORMATION FOR SEQ ID NO: 23:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 12 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

GGGTGCCGAG GC

12

- (2) INFORMATION FOR SEQ ID NO: 24:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 72 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

AAAAGAATTC TGAATGTGTT ATTTTAGCTC AGGTCACTCT GACCTGATTA TCAAGACCCC

ACTTCACCCC CT		72
(2) INFORMATION FOR SEQ ID NO: 25: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 46 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear		
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>		
(iii) HYPOTHETICAL: NO		
(iv) ANTI-SENSE: NO		
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:		
AAAAGCGGCC GCAGGGGGAG GAGGGTCCAT GGAATCTGCC AAGGAG		46
(2) INFORMATION FOR SEQ ID NO: 26:		
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 		
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>		
(iii) HYPOTHETICAL: NO		
(iv) ANTI-SENSE: NO		
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:		17
GTAAAACGAC GGCCAGT		17
(2) INFORMATION FOR SEQ ID NO: 27:		
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 		
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	·	
(iii) HYPOTHETICAL: NO		
(iv) ANTI-SENSE: NO		

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:	
GGATAACAAT TTCACACAGG	20
(2) INFORMATION FOR SEQ ID NO: 28:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 25 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:	
AAAGCGGCCG CACTGGCCTG AGAGA	25
(2) INFORMATION FOR SEQ ID NO: 29:	23
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
·	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:	
AAAAGGCCCA GCCGGCCATG GCCCAGCCCA CCACGCGTCC G	41
(2) INFORMATION FOR SEQ ID NO: 30:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 42 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	

(iv)	ANTI-SENSE:	NO
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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:	
AAAAGGCCCA GCCGGCCATG GCCCAGTCCC ACCACGCGTC CG	43
(2) INFORMATION FOR SEQ ID NO: 31:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 43 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:	
AAAAGGCCCA GCCGGCCATG GCCCAGTACC CACCACGCGT CCG	43
(2) INFORMATION FOR SEQ ID NO: 32:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 72 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:	
AAAAGAATTC GAGGTTACAT TAACTTTGTT CCGGTCAGAC TGACCCAAGT CGACCTGAAT	60
GTGTTATTTT AG	72
(2) INFORMATION FOR SEQ ID NO: 33:	
(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 32 base pairs(B) TYPE: nucleic acid(C) STRANDEDNESS: single	

(D) TOPOLOGY: linear

(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
(iv)	ANTI-SENSE: NO	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 33:	
CCTTGGCA	AGA TTCCATCTCG GCCATTGCCG GC	32
(2) INFO	DRMATION FOR SEQ ID NO: 34:	
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
(iv)	ANTI-SENSE: NO	
	SEQUENCE DESCRIPTION: SEQ ID NO: 34:	31
	GG CCGAGATGGA ATCTGCCAAG G	31
	RMATION FOR SEQ ID NO: 35:	
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 86 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
(iv)	ANTI-SENSE: NO	
	SEQUENCE DESCRIPTION: SEQ ID NO: 35:	
	AC TCAATCAGTT ATGCGGCCGC CAGCTGCAGG AGGGCCGGCT GGGCCGACCC	60
TCCTCCCC	CA GACCCCACTT CACCCC	86

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19 (2) INFORMATION FOR SEQ ID NO: 36:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	·
(iv) ANTI-SENSE: NO	•
	•
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:	
TGTTGAAACA CAAGCGCCAG	20
(2) INFORMATION FOR SEQ ID NO: 37:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 24 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
(ii) MOLECULE TYPE: cDNA	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:	
TGGAAGAGGC ACGTTCTTTT CTTT	24
(2) INFORMATION FOR SEQ ID NO: 39:	
(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 24 base pairs(B) TYPE: nucleic acid(C) STRANDEDNESS: single	

- (D) TOPOLOGY: linear
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

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CTCCTTCTTA CTCTTGCTGG CGGT	24
(2) INFORMATION FOR SEQ ID NO: 39:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 24 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:	
AGACTCTCCC CTGTTGAAGC TCTT	24
(2) INFORMATION FOR SEQ ID NO: 40:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 27 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:	
TGAAGATTCT GTAGGGGCCA CTGTCTT	27
(2) INFORMATION FOR SEQ ID NO: 41:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	

(xi) S	SEQUENCE DESCRIPTION: SEQ ID NO: 41:	
·	CCACCTGAGG AGACGGTGAC CAGGGTGCC	39
•	MATION FOR SEQ ID NO: 42:	
(i) S	EQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) M	OLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) H	YPOTHETICAL: NO	
(iv) A	NTI-SENSE: NO	
	EQUENCE DESCRIPTION: SEQ ID NO: 42:	
TGAACCGCCT	CCACCTGAAG AGACGGTGAC CATTGTCCC	39
(2) INFORM	ATION FOR SEQ ID NO: 43:	
	EQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) M	OLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) H	YPOTHETICAL: NO	
(iv) A	NTI-SENSE: NO	
(xi) S	EQUENCE DESCRIPTION: SEQ ID NO: 43:	
TGAACCGCCT	CCACCTGAGG AGACGGTGAC CAGGGTTCC	39
(2) INFORM	ATION FOR SEQ ID NO: 44:	
, ,	EQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii) M	OLECULE TYPE: other nucleic acid	

(iii)	22 HYPOTHETICAL: NO	
`		ANTI-SENSE: NO	
	(20)		
	(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 44:	
TGAA	CCGC	CT CCACCTGAGG AGACGGTGAC CGTGGTCCC	39
(2)	INFO	RMATION FOR SEQ ID NO: 45:	
	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
	(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
	(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 45:	
TTTT	TGGCC	CC AGCCGGCCAT GGCCCAGGTG CAGCTGGTGC AGTCTGG	47
(2)	INFOF	RMATION FOR SEQ ID NO: 46:	
	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
	(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
į.	Lii)	HYPOTHETICAL: NO	
((xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 46:	
TTTTI	GGCC	C AGCCGGCCAT GGCCCAGGTC AACTTAAGGG AGTCTGG	47
(2) I	NFOR	MATION FOR SEQ ID NO: 47:	
	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	

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(iii)	HYPOTHETICAL:	NO
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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:
TTTTTGGCCC AGCCGGCCAT GGCCGAGGTG CAGCTGGTGG AGTCTGG
(2) INFORMATION FOR SEQ ID NO: 48:
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>
(iii) HYPOTHETICAL: NO
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:
TTTTTGGCCC AGCCGGCCAT GGCCCAGGTG CAGCTGCAGG AGTCGGG
(2) INFORMATION FOR SEQ ID NO: 49:
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>
(iii) HYPOTHETICAL: NO
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:
TTTTGGCCC AGCCGGCCAT GGCCGAGGTG CAGCTGTTGC AGTCTGC

- (2) INFORMATION FOR SEQ ID NO: 50:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 47 base pairs (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO

(xi) S	SEQUENCE DESCRIPTION: SEQ ID NO: 50:	
TTTTTGGCCC	AGCCGGCCAT GGCCCAGGTA CAGCTGCAGC AGTCAGG	47
(2) INFORM	MATION FOR SEQ ID NO: 51:	
, .	SEQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
	OLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) H	YPOTHETICAL: NO	
(iv) A	NTI-SENSE: NO	
(xi) S	EQUENCE DESCRIPTION: SEQ ID NO: 51:	
TTATTCGCGG	CCGCCTAAAC AGAGGCAGTT CCAGATTTC	39
(2) INFORM	ATION FOR SEQ ID NO: 52:	
!	EQUENCE CHARACTERISTICS: (A) LENGTH: 39 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
	OLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) HY	YPOTHETICAL: NO	
(xi) SE	EQUENCE DESCRIPTION: SEQ ID NO: 52:	
TCACTTGCG	GCCGCCTACA GTGTGGCCTT GTTGGCTTG	39
2) INFORMA	ATION FOR SEQ ID NO: 53:	
() (QUENCE CHARACTERISTICS: A) LENGTH: 41 base pairs B) TYPE: nucleic acid C) STRANDEDNESS: single D) TOPOLOGY: linear	
	LECULE TYPE: other nucleic acid A) DESCRIPTION: /desc = "synthetic DNA"	
12221 1795	DOTHETTCAL NO	

(iv)	ANTI-SE	NSE:	NO
(+ 0)	WALT - SE	NOE	14.

(xi)) SEQUENCE DESCRIPTION: SEQ ID NO: 53:	
TCTGGCGG	GTG GCGGATCGGA CATCCAGATG ACCCAGTCTC C	4
(2) INFO	ORMATION FOR SEQ ID NO: 54:	
(i)) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
(iv)	ANTI-SENSE: NO	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 54:	
CTGGCGG	TG GCGGATCGGA TGTTGTGATG ACTCAGTCTC C	4:
(2) INFO	RMATION FOR SEQ ID NO: 55:	
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"	
(iii)	HYPOTHETICAL: NO	
(iv)	ANTI-SENSE: NO	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 55:	
CTGGCGG1	IG GCGGATCGGA AATTGTGTTG ACGCAGTCTC C	41
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(2) INFORMATION FOR SEQ ID NO: 56:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs

 - (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid

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(A) DESCRIPTION: /desc = "synthetic DNA"	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:	
TCTGGCGGTG GCGGATCGGA CATCGTGATG ACCCAGTCTC C	41
(2) INFORMATION FOR SEQ ID NO: 57:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:	
TCTGGCGGTG GCGGATCGGA AACGACACTC ACGCAGTCTC C	41
(2) INFORMATION FOR SEQ ID NO: 58:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:	
TCTGGEGGTG GCGGATCGGA AATTGTGCTG ACTCAGTCTC C	41
(2) INFORMATION FOR SEQ ID NO: 59:	
(i) SEQUENCE CHARACTERISTICS:	

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27

(C)	STRANDEDNESS:	single
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- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "synthetic DNA"
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

TTCTCGTGCG GCCGCCTAAC GTTTGATTTC CACCTTGGTC CC

42

- (2) INFORMATION FOR SEQ ID NO: 60:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

TTCTCGTGCG GCCGCCTAAC GTTTGATCTC CAGCTTGGTC CC

42

- (2) INFORMATION FOR SEQ ID NO: 61:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

TTCTCGTGCG GCCGCCTAAC GTTTGATATC CACTTTGGTC CC

(2) INFORMATION FOR SEQ ID NO: 62:

42



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(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 42 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"
(iii)	HYPOTHETICAL: NO
(iv)	ANTI-SENSE: NO
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 62:
TTCTCGTG	CG GCCGCCTAAC GTTTGATCTC CACCTTGGTC CC
(2) INFO	RMATION FOR SEQ ID NO: 63:
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 42 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"
(iii)	HYPOTHETICAL: NO
(iv)	ANTI-SENSE: NO
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO: 63:
TTCTCGTGC	G GCCGCCTAAC GTTTAATCTC CAGTCGTGTC CC
(2) INFOR	MATION FOR SEQ ID NO: 64:
(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
(ii)	MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"
(1111)	HYPOTHETICAL: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

(iv) ANTI-SENSE: NO

TCTGGCGGTG GCGGATCGCA GTCTGTGTTG ACGCAGCCGC C

- (2) INFORMATION FOR SEQ ID NO: 65:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

TCTGGCGGTG GCGGATCGCA GTCTGCCCTG ACTCAGCCTG C

- (2) INFORMATION FOR SEQ ID NO: 66:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthesis DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

TCTGGCGGTG GCGGATCGTC CTATGTGCTG ACTCAGCCAC C

- (2) INFORMATION FOR SEQ ID NO: 67:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 41 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "synthesis DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:	
TCTGGCGGTG GCGGATCGTC TTCTGAGCTG ACTCAGGACC C	41
(2) INFORMATION FOR SEQ ID NO: 68:	
 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthesis DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:	
TCTGGCGGTG GCGGATCGCA CGTTATACTG ACTCAACCGC C	41
(2) INFORMATION FOR SEQ ID NO: 69:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthesis DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:	
TCTGGCGGTG GCGGATCGCA GGCTGTGCTC ACTCAGCCGT C	41
(2) INFORMATION FOR SEQ ID NO: 70:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 41 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthesis DNA"</pre>	

(iii)	HYPOTHETICAL:	NO
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(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

TCTGGCGGTG GCGGATCGAA TTTTATGCTG ACTCAGCCCC A

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(2) INFORMATION FOR SEQ ID NO: 71:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (A) DESCRIPTION: / desc = Synthetic
- (iv) ANTI-SENSE: NO

(iii) HYPOTHETICAL: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

TTCTCGTGCG GCCGCCTAAC CTAGGACGGT GACCTTGGTC CC

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- (2) INFORMATION FOR SEQ ID NO: 72:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "synthetic DNA"
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

TTCTCGTGCG GCCGCCTAAC CTAGGACGGT CAGCTTGGTC CC

42

(2) INFORMATION FOR SEQ ID NO: 73:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 42 base pairs(B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

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<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:	
TTCTCGTGCG GCCGCCTAAC CTAAAACGGT GAGCTGGGTC CC	42
(2) INFORMATION FOR SEQ ID NO: 74:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 18 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:	
CGATCCGCCA CCGCCAGA	18
(2) INFORMATION FOR SEQ ID NO: 75:	
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 18 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear	
<pre>(ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "synthetic DNA"</pre>	
(iii) HYPOTHETICAL: NO	
(iv) ANTI-SENSE: NO	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:	
GTCTCCTCAG GTGGAGGC	18
(2) INFORMATION FOR SEQ ID NO: 76:	

(i) SEQUENCE CHARACTERISTICS:





- (A) LENGTH: 54 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "synthetic DNA"

- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:
 CGATCCGCCA CCGCCAGAGC CACCTCCGCC TGAACCGCCT CCACCTGAGG AGAC